

**ABSTRACT**

**[0039]** A multiple mode feed horn is provided for transmitting and receiving signals. The feed horn includes a transverse electric throat section, a transverse electric profile section, and a transverse electric aperture section. The transverse electric profile section propagates a first transverse electric (TE) mode. The transverse electric aperture section propagates a second TE mode. The multiple mode feed horn prevents propagation of transverse magnetic modes from said throat section to said aperture section.